What is claimed is:

1. An apparatus comprising:

a substrate; and

a plurality of micropins thermally coupled to the substrate, the plurality of micropins arranged in a pixel like pattern over the substrate.

2. The apparatus of claim 1, wherein the plurality of micropins comprises a plurality of micropins formed from the substrate.

3. The apparatus of claim 1, wherein the substrate comprises an integrated circuit (IC) die.

4. The apparatus of claim 1, wherein the plurality of micropins comprises a plurality of micropins coupled to an interface layer, the interface layer thermally coupled to the substrate.

5. The apparatus of claim 4, wherein the interface layer comprises a diamond film.

6. The apparatus of claim 4, wherein the interface layer comprises a solderable layer.

7. The apparatus of claim 6, wherein the solderable layer comprises a solderable layer formed from at least one of copper (Cu), gold (Au), nickel (Ni), aluminum (Al), titanium (Ti), tantalum (Ta), silver (Ag), and Platinum (Pt).

8. The apparatus of claim 1, wherein the plurality of micropins comprises a plurality of micropins substantially enclosed in a device, the device having a cover disposed over the plurality of micropins.

9. The apparatus of claim 8, wherein the device further comprises an inlet and an outlet.

10. The apparatus of claim 9 further comprising a pump, the pump having an outlet, the outlet material transferably coupled to the inlet of the device.

11. The apparatus of claim 1, wherein the plurality of micropins comprises a plurality of micropins substantially enclosed in a device, the device includes a cover having the plurality of micropins formed thereon.

12. The apparatus of claim 11, wherein the device further comprises an inlet and an outlet.

13. The apparatus of claim 12 further comprising a pump, the pump having an outlet, the outlet material transferably coupled to the inlet of the device.

14. The apparatus of claim 1, wherein each of the plurality of micropins comprises a micropin having a primitive geometric shape.

15. The apparatus of claim 1, wherein each of the plurality of micropins comprises a micropin having a complex geometric shape.

16. The apparatus of claim 1, wherein the plurality of micropins comprises a plurality of micropins arranged to facilitate flow of material across the plurality of micropins in at least two directions.

17. A heat exchange system comprising:

a device having an inlet and an outlet, comprising:

a substrate, and

a plurality of micropins thermally coupled to the substrate, the plurality of micropins arranged to facilitate flow of material across the plurality of micropins in at least two directions, and arranged in a pixel like pattern over the substrate;

a pump, the pump having an inlet and an outlet, the outlet of the pump material transferably coupled to the inlet of the device; and

a heat exchanger, the heat exchanger having an inlet and an outlet, the inlet of the heat exchanger material transferably coupled to the outlet of the device, and the outlet of the heat exchanger material transferably coupled to the inlet of the pump.

18. The heat exchange system of claim 17, wherein the plurality of micropins comprises a plurality of micropins formed from the substrate.

19. The heat exchange system of claim 17 further comprising an integrated circuit (IC) die thermally coupled to the plurality of micropins.

20. The heat exchange system of claim 17, wherein the device comprises a device substantially enclosing the plurality of micropins, the device having a cover disposed over the plurality of micropins.

21. The heat exchange system of claim 17, wherein the device comprises a device substantially enclosing the plurality of micropins, the device including a cover having the plurality of micropins formed thereon.

22. An electronic system comprising:

a substrate, the substrate thermally coupled to an integrated circuit (IC) die;

a plurality of micropins thermally coupled to the substrate, the plurality of micropins arranged in a pixel like pattern over the substrate;

a wiring board electrically coupled to the IC die; and

a memory device electrically coupled to the wiring board.

23. The electronic system of claim 22, wherein the plurality of micropins comprises a plurality of micropins formed from the substrate.

24. The electronic system of claim 22, wherein the plurality of micropins comprise a plurality of micropins substantially enclosed in a device, the device having a cover disposed over the plurality of micropins.

25. The electronic system of claim 24, wherein the device further comprises an inlet and an outlet.

26. The electronic system of claim 25 further comprising a pump, the pump having an outlet, the outlet coupled to the inlet of the device.

27. The electronic system of claim 22, wherein the plurality of micropins comprises a plurality of micropins substantially enclosed in a device, the device includes a cover having the plurality of micropins formed thereon.

28. The electronic system of claim 27, wherein the device further comprises an inlet and an outlet.

29. The electronic system of claim 28 further comprising a pump, the pump having an outlet, the outlet material transferably coupled to the inlet of the device.

30. The electronic system of claim 22, wherein the memory device comprises a flash memory device.

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~~33.~~ An electronic system comprising:

a substrate, the substrate thermally coupled to an integrated circuit (IC) die;

a plurality of micropins thermally coupled to the substrate, the plurality of micropins arranged to facilitate flow of material across the plurality of micropins in a pixel like pattern over the substrate, and substantially enclosed in a device, the device having an inlet and an outlet;

a pump, the pump having an inlet and an outlet, the outlet of the pump material transferably coupled to the inlet of the device;

a heat exchanger, the heat exchanger having an inlet and an outlet, the inlet of the heat exchanger material transferably coupled to the outlet of the device, and the outlet of the heat exchanger material transferably coupled to the inlet of the pump;

a wiring board electrically coupled to the substrate; and

a memory device electrically coupled to the wiring board.

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~~34.~~ The electronic system of claim 33, wherein the plurality of micropins comprises a plurality of micropins formed from the substrate.

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~~35.~~ The electronic system of claim 33, wherein the device comprises a device having a cover disposed over the plurality of micropins.

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~~36.~~ The electronic system of claim 33, wherein the device comprises a device having a cover, the cover having the plurality of micropins formed thereon.

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~~37~~. The electronic system of claim 33, wherein the memory device comprises a flash memory device.